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NO MEETING JUL (TONY'S fixing up the new house's basement)

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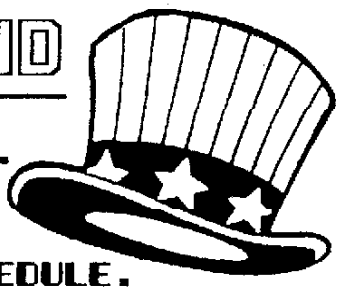

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★ ★ HAPPY FOURTH OF JULY ★ ★

ESTABLISHED APRIL-1983

COME TO THE FAIRS

* 1993 FAIR SCHEDULE *

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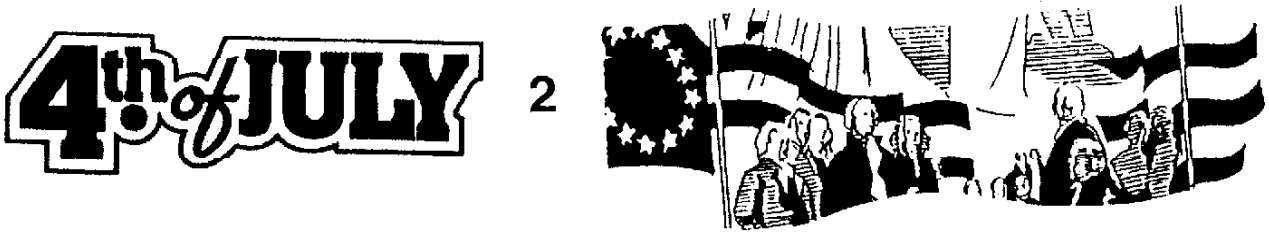

XB MISCELLANY #25

By Earl Raguse

Well, at long last we are done with the program LISTMAN, as least as far as I am going to take it. I bet I learned as much as you did. Actually I hope you learned as much as I did. On the next page, is a complete listing of the full program.

One thing you may notice, is that there is no provision for deleting a record. You may edit it to a blank, but it is still there. There is a good reason for this. TIF/FW does a better job of this than I could ever do in XB, so why fight it. That's why I chose to use DV80 files. When you go into a file to delete a record, make sure that you delete the whole record, that is a full 6, count em, six lines.

I also did not complete the Search and Sort Modules either. TIW/FW, does a good job of searching for strings using Find String. There is no sense in duplicating that unless you wish to do it for the practice. If so I will be glad to help. If you put your records in order in the first place, you won't be sorting them either. When you add records, do it with TIW/FW, and insert them in the right place.

Even without sorting and searching, you should now be able to write programs that 1. Enter data, 2. Display data, 3. Edit data, 4. Save and Retrieve data from disk files, and 5. Print your data to a printer. That makes you pretty much an expert. You have also learned some programming techniques that only a few high level programmers use. I probably also did some stupid things that I will discover later. If you don't make mistakes, you do not learn anything, so do not fear, make all the mistakes you want, I won't charge you.

If I get enough response from this effort, good or bad, I intend to continue with graphics, I will actually make a LISTMAN subprogram which will have a LISTMAN chasing after lists and eating them if he catches them. If you want me to continue, you must somehow tell me. Write, phone, send Faxes, just tell me, I don't care, but I will not continue unless I know I am not boring you.

Even later, I may do a sort routine, using an assembly sorting LINK.

```
100 ! SAVE DSK1.LISTMAN
110 ! By Earl Raguse
       UGOC 9/92
120 CALL SET(5,16)!
    clear screen,
    set blue color
       white letters
130 F$="A File Has Been Load
ed" :: M$="Restrict Your Sel
ections 1-9" :: P$="PIO"
 :: DIR$="FWD" :: DIM REC$(2
00,6):: DIR=1
135 CALL CLPUT("This is LIST
MAN",4):: CALL PUT("A Produc
t of the",6):: CALL PUT
("UGOC",8):: CALL PUT("Enter
 1st letter of a Prompt",12)
136 CALL PUT("Or just follow
 instructions ",14):: CALL Q
UIT
140 CALL MENU :: IF N THEN C
ALL PUT(F$,24)
150 CALL GO("123456789",K)::
 IF K=0 THEN CALL PUT(M$,23)
:: CALL PAK :: GOTO 140
160 ON K GOTO 1100,1200,1300
,1400,1500,1600,1700,1800,19
00
1100 CALL CLPUT("Data Entry
Section",2)
1110 DISPLAY AT(4,1):"You ma
y have up to 5 lines per re
cord. Use arrow keys, and th
e ENTER key to accept."
1120 IF N THEN 1150 ELSE DIS
PLAY AT(10,1):"If you intend
 to append     records to an
 existing file,you must firs
t load that    file."
1130 CALL PUT("If This is an
 APPEND file,  ",16):: CALL
PUT("Press A, else press any
 key ",18)
1140 CALL GKEY(Q,24):: IF Q=
ASC("A")THEN APP=1 :: GOTO 1
400 :: ELSE APP=0
1150 CALL PUT("Data Entry Se
ction",2):: DISPLAY AT(8,1):
"You will over write existin
grecords, If that is not wha
t"
1155 DISPLAY AT(10,1):"you w
ant, press A for Addend": :"
Press A, Else Press Any Key"
:: CALL GKEY(Q,24):: IF Q=AS
C("A")THEN APP=1 ELSE N=0
1160 N=N+1 :: CALL CLS(7,12)
:: DISPLAY AT(8,7):"Record N
umber";N :: FOR I=1 TO 5 ::
DISPLAY AT(I+9,1):I :: NEXT
I :: CALL KEY(5,K,S)
1180 CALL KEY(5,K,S):: FOR I
=1 TO 5 :: ACCEPT AT(I+9,3)S
IZE(-24):REC$(N,I) :: NEXT I
1190 CALL PUT("Edit  More  Q
uit",24):: CALL GO("EMQ",Q):
: IF Q=0 THEN 1190 ELSE ON Q
 GOTO 1180,1160,140
1200 CALL CLPUT("Data Displa
y Section",2)
1205 IF N<1 THEN CALL PUT("Y
ou Have No Data To Display",
12):: GOTO 1290
1210 CALL CLPUT("If you know
 the record",8):: CALL PUT("
number, Enter that numbe
r",10):: CALL PUT("Else Ente
r 00",12):: ACCEPT AT(14,13)
:J
1215 IF J<>0 THEN 1280 ELSE
J=1 :: PAR=0
1220 CALL CLS(6,20):: GOSUB
2100 :: GOTO 1230 ! display
record
1230 CALL PUT("Press First L
etter To",23):: CALL PUT("Ne
xt  Last  All  Quit",24)
1240 CALL GO("NLAQ",Q):: IF
Q=0 THEN 1240 ELSE ON Q GOTO
 1250,1260,1275,140
1250 DIR=1 :: GOTO 1265
1260 DIR=-1 :: GOTO 1265
1265 J=J+DIR :: IF J<1 OR J>
N THEN 1270 ELSE IF PAR THEN
 1280 ELSE 1220
1270 CALL CLS(22,23):: CALL
PUT("That's All",22):: CALL
PAK :: GOTO 140
1275 PAR=1 ! print all recor
ds
1280 IF J>N THEN 1270 :: CAL
L CLS(6,20):: GOSUB 2100 ::
IF PAR THEN CALL WAIT(400) :
: GOTO 1265 ELSE CALL PAK ::
 GOTO 1210
1290 CALL PAK :: GOTO 140
1300 CALL CLPUT("Save Data S
ection",2)
1310 IF N<1 THEN CALL PUT("Y
ou Have No Data To Save",12)
:: GOTO 1390
1320 CALL SAVIT(FIL$,REC$(,)
,N,APP)
1390 CALL PAK :: GOTO 140
1400 CALL CLPUT("Load Data S
ection",2)
1410 CALL GETIT(FIL$,REC$(,)
,N)
1490 CALL PAK :: GOTO 140
```

continued next page

LISTMAN Listing (Cont)

```
1500 CALL CLPUT("Data Editin
g Section",2)
1505 IF N<1 THEN CALL PUT("Y
ou Have No Data to Edit",12)
:: GOTO 1590
1510 CALL CLS(5,20):: CALL P
UT("If you know the record",
8):: CALL PUT("number, Enter
 that number",10):: CALL PUT
("Else Enter 00",12)
1515 ACCEPT AT(14,13):J :: I
F J<>0 THEN 1575 ELSE J=1 ::
 CALL CLS(5,20)
1520 DISPLAY AT(7,10):"Recor
d";J :: GOSUB 2100
1530 CALL CLS(22,22):: CALL
PUT("Press First Letter To",
23):: CALL PUT("Edit  Next
 Last  Quit",24)
1540 CALL GO("ENLQ",Q):: IF
Q=0 THEN 1540 ELSE ON Q GOTO
 1580,1550,1560,140
1550 DIR=1 :: GOTO 1565
1560 DIR=-1 :: GOTO 1565
1565 J=J+DIR :: IF J<1 OR J=
N THEN 1570 ELSE IF J>N THEN
 140 ELSE 1520
1570 CALL CLS(22,24):: CALL
PUT("That's All",22):: GOTO
1520
1575 CALL CLEAR :: IF J>N TH
EN 1570 :: DISPLAY AT(7,10):
"Record";J :: GOSUB 2100
1580 FOR I=1 TO 5 :: CALL KE
Y(5,K,S):: ACCEPT AT(I+9,3)S
IZE(-24):REC$(J,I):: NEXT I
:: CALL PUT("More  Edit  Qui
t",23)
1585 CALL GO("MEQ",Q):: IF Q
=0 THEN 1585 :: ON Q GOTO 15
10,1580,140
1590 CALL PAK :: GOTO 140
1600 CALL CLPUT("Print Label
s Section",2)
1610 IF N<1 THEN CALL PUT("Y
ou Have No Data to Print",12
):: GOTO 1690
1620 M=4 :: CALL OPENPRNTR(P
$,M):: CALL EMPHASIZE(M):: J
,DIR=1 :: PAR=0
1625 DISPLAY AT(7,10):"Recor
d ":J
1630 CALL CLS(5,5):: CALL CL
S(24,24):: GOSUB 2100 :: IF
PAR THEN 1680
1640 CALL PUT("Next Last Pri
nt All Quit",23):: PAR=0
1645 CALL GO("NLPAQ",Q):: IF
 Q=0 THEN 1645 ELSE ON Q GOT
O 1650,1655,1680,1670,1685
1650 DIR=1 :: GOTO 1660
1655 DIR=-1 :: GOTO 1660
1680 J=J+DIR :: IF J<1 OR J>
N THEN 1685 ELSE 1625
1670 PAR=1 :: CALL PUT("To H
alt, Hold H Key",5)! print a
ll records
1680 PRINT #M:CHR$(10):: FOR
 K=1 TO 5 :: PRINT #M:REC$(J
,K):: NEXT K :: CALL KEY(3,K
,S):: IF K=ASC("H")THEN 1640
 ELSE 1660
1685 CLOSE #M :: CALL CLS(22
,23):: CALL PUT("That's All"
,20)
1690 CALL PAK :: GOTO 140
1700 CALL CLPUT("Data Sort S
ection",2)
1710 CALL PUT("Haven't Done
That Yet",12)
1790 CALL PAK :: GOTO 140
1800 CALL CLPUT("Data Search
ing Section",2)
1810 CALL PUT("Haven't Done
That Either",12)
1890 CALL PAK :: GOTO 140
1900 CALL CLPUT("Help Sectio
n",2)
1910 CALL PUT("Read DV80 Fil
e Called",12):: CALL PUT("LI
STHELP",14)
1920 CALL PUT("You May Have
To Write That",16)
1930 CALL PUT("Do You Want T
o Read Now? Y/N",18):: CALL
GKEY(Q,24):: IF Q=ASC("Y") T
HEN RUN "DSK1.FILEREAD" ELSE
 1990
1990 CALL PAK :: GOTO 140
2000 !
2010 ! Subroutine Area
2020 !
2100 DISPLAY AT(7,10):"Recor
d";J :: FOR K=1 TO 5 :: DISP
LAY AT(K+9,1):K;REC$(J,K) ::
 NEXT K :: RETURN
2970 !
2980 ! Subprogram area
2990 !
3500 SUB MENU :: CALL CLPUT(
"LISTMAN",1):: CALL PUT("Pre
ss Number to Select",3)
3510 DISPLAY AT(05,9):"1. En
ter Data"
3515 DISPLAY AT(07,9):"2. Di
splay Data"
3520 DISPLAY AT(09,9):"3. Sa
ve Data"
3525 DISPLAY AT(11,9):"4. Lo
ad Data"
3530 DISPLAY AT(13,9):"5. Ed
it Data"
3535 DISPLAY AT(15,9):"6. Pr
int Labels"
3540 DISPLAY AT(17,9):"7. So
rt Data"
3545 DISPLAY AT(19,9):"8. Se
arch Data"
3550 DISPLAY AT(21,9):"9. Ge
t Help"
3560 SUBEND
4000 SUB GKEY(Q,ROW)
4010 CALL KEY(3,K,S):: IF S<
1 THEN 4010 :: DISPLAY AT(RO
W,1)SIZE(30):"       You Sel
ected ";CHR$(K):: Q=K
4020 SUBEND
4100 SUB SAVIT(FIL$,VAR$(,),
N,APP)
4110 CALL PUT("What Drive#",
12):: CALL GKEY(Q,24):: IF (
Q-48)<1 THEN 4110 ELSE D$=CH
R$(Q):: CALL PUT("What File
Name",14)
4120 DISPLAY AT(16,10):FIL$
4130 ACCEPT AT(16,10)SIZE(-1
0):FIL$ :: OPEN #3:"DSK"&D$&
"."&FIL$,OUTPUT,DISPLAY,VARI
ABLE 80
4140 !PRINT #3:N
4150 FOR J=1 TO N :: PRINT #
3:CHR$(32):: FOR K=1 TO 5 ::
 DISPLAY AT(12,6):"Saving Re
cord";J :: PRINT #3:VAR$(J,K
) :: NEXT K :: NEXT J :: CLO
SE #3 :: N=J-1
4160 DISPLAY AT(12,1)ERASE A
LL:"    I Saved";N;"Records"
 :: SUBEND
4200 SUB GETIT(FIL$,VAR$(,),
N)
4210 CALL PUT("Enter Drive#"
,12):: CALL GKEY(Q,24):: IF
(Q-48)<1 THEN 4210 ELSE D$=
CHR$(Q):: ON ERROR 4215
4215 CALL PUT("Enter File Na
me",12):: CALL PUT("if you c
an't remember ",20):: CALL P
UT("Say DD for Disk Director
y",22)
4220 DISPLAY AT(16,10):FIL$
:: ACCEPT AT(16,10)SIZE(-10)
:FIL$ :: IF FIL$="DD" THEN C
ALL CAT :: CALL CLEAR :: GOT
O 4215
4225 OPEN #3:"DSK"&D$&"."&FI
L$,INPUT :: DISPLAY AT(10,6)
:"Reading Record";:: ON ERRO
R STOP
4230 FOR J=1 TO 200 :: DISPL
AY AT(10,22):J
4235 IF EOF(3)THEN 4250 :: L
INPUT #3:A$
4237 FOR K=1 TO 5
4240 IF EOF(3)THEN 4250 :: L
INPUT #3:VAR$(J,K)!:: DISPLA
Y AT(9+K,2):VAR$(J,K)! Optio
nal display
4245 NEXT K :: NEXT J
4250 CLOSE #3 :: CALL CLPUT(
"I Read "&STR$(J-1)&" Record
s",12):: N=J-1 :: SUBEND
4300 SUB CLS(R1,R2):: FOR R=
R1 TO R2 :: DISPLAY AT(R,1)S
IZE(30):: NEXT R :: SUBEND
4700 SUB WAIT(T):: FOR WAIT=
1 TO T :: NEXT WAIT ::SUBEND
4800 SUB CLPUT(A$,L)
4810 T=15-LEN(A$)/2 :: DISPL
AY AT(L,T)ERASE ALL:A$
4820 SUBEND
4900 SUB PUT(A$,L)
4910 T=15-LEN(A$)/2 :: DISPL
AY AT(L,1)SIZE(30):: DISPLAY
 AT(L,T):A$
4920 SUBEND
5500 SUB AGAIN :: DISPLAY AT
(24,1):"Again? Press A, Else
 Any Key"
5510 CALL KEY(3,K,S):: IF S<
1 THEN 5510 ELSE IF K<>ASC("
A")THEN RUN "DSK1.DIR"
5520 SUBEND
5900 SUB GO(A$,K):: CALL GKE
Y(Q,24):: K=POS(A$,CHR$(Q),1
):: SUBEND
6100 SUB PAK
6110 DISPLAY AT(24,3)SIZE(30
):"Press Any Key to Proceed"
6120 CALL KEY(3,K,S):: IF S<
1 THEN 6110
6130 SUBEND
6150 SUB QUIT
6160 DISPLAY AT(23,1):"  Pre
ss Any Key to Proceed ":"  B
ut Q Quits, and B Breaks"
6170 CALL KEY(0,K,S):: IF S<
1 THEN 6160 ELSE K=K AND 95
:: IF CHR$(K)="Q" THEN RUN
"DSK1.DIR" ELSE IF CHR$(K)=
"B" THEN STOP
6180 SUBEND
6200 SUB SET(S,C):: CALL CLE
AR :: CALL SCREEN(S):: CALL
CHARSET :: FOR I=0 TO 14 ::
CALL COLOR(I,C,1):: NEXT I ::
 SUBEND
6220 SUB PAUSE :: DISPLAY AT
(24,1):" SPACE Pauses, But Q
 Quits"
6230 CALL KEY(3,K,S):: IF S<
1 THEN 6250 ELSE IF CHR$(K)=
"Q" THEN 130 ELSE IF K=32 TH
EN 6230
6240 DISPLAY AT(24,1)SIZE(30)
6250 SUBEND
6300 SUB CAT
6305 ! Needs GKEY, PAK & CLS
6310 !  E Raguse 10/90
6320 DISPLAY AT(10,1)ERASE A
LL:"   Enter Drive# to Catal
og" :: CALL GKEY(Q,24):: D$=
CHR$(Q):: CALL CLS(10,11)
6330 OPEN #1:"DSK"&D$&".",RE
LATIVE,INTERNAL,INPUT
6340 INPUT #1:A$,L,L,L ! rea
d and toss
6350 X,Z=0 :: FOR F=1 TO 127
 :: INPUT #1:A$,T,J,K :: IF
A$="" THEN F=127
6360 Y=2-14*(Z=1)
6365 IF ABS(T)=2 THEN DISPLA
Y AT(X+3,Y)SIZE(14):A$ ELSE
X=X-1 :: GOTO 6370
6370 IF X<18 THEN X=X+1 ELSE
 X=0 :: Z=1-Z
6380 NEXT F :: CLOSE #1 :: C
ALL PAK :: SUBEND
6400 SUB OPENPRNTR(PRNTR$,M)
:: DISPLAY AT(12,1)ERASE ALL
:"    TURN ON YOUR PRINT
ER"
6410 OPEN #M:PRNTR$,OUTPUT,V
ARIABLE 136 :: PRINT #M:CHR$
(27)&CHR$(64):: DISPLAY
AT(12,1)SIZE(30):: SUBEND
6560 SUB EMPHASIZE(M):: PRIN
T #M:CHR$(27);"E"; :: SUBEND
```

TIPS FROM THE TIGERCUB

No. 68

Tigercub Software
156 Collingwood Ave.
Columbus, OH 43213

****

My three Nuts & Bolts disks, each containing 100 or more subprograms, have been reduced to $5.00 each. I am out of printed documentation so it will be supplied on disk.

My TI-PD library now has almost 600 disks of fairware (by author's permission only) and public domain, all arranged by category and as full as possible, provided with loaders by full program name rather than filename, Basic programs converted to XBasic, etc. The price is just $1.50 per disk(!), post paid if at least eight are ordered. TI-PD catalog #5 and the latest supplement is available for $1 which is deductible from the first order.

When I have finished reading Barry Traver's column in Computer Monthly, I like to take a look at whatever Dr. Michael Ecker is up to in his "Recreational Computing" column, although much of his math is beyond me and I can't always translate his GW Basic into TI Basic.

In the February issue, he had a routine to play Fibonacci modular music. This is the TI version; it is not very musical, but the notes are in the chromatic scale.

```
100 A=0 :: B=1 :: M=51
110 C=A+B :: C=C-M*INT(C/M):
: CALL SOUND(-100,110*2^(C/1
2),5):: A=B :: B=C :: GOTO 1
10
```

Dr. Ecker also had a challenge to swap two numbers without using a third variable or the SWAP command - which TI Basic doesn't have anyway. The practical way, of course, is to use the 3rd variable, T=A :: A=B :: B=T, but just for the fun of it, if we are dealing with one-digit numbers -

```
100 A=1 :: B=2 :: A=A+B/10 :
: B=INT(A):: A=(A-INT(A))*10
:: PRINT A;B
```

But suppose we are dealing with numbers of any length - we can still do it with a one-liner, or a two-liner if we want to input the numbers from the keyboard -

```
100 INPUT A :: INPUT B
110 B=B/10^(LEN(STR$(B))):: 
A=A+B :: B=INT(A):: A=A-INT(
A):: A=A*10^(LEN(STR$(A))-1)
:: PRINT A;B :: GOTO 110
```

So you got smart and tried a negative number or a decimal? OK, how about this -

```
100 INPUT A$ :: INPUT B$
110 A$=A$&" "&B$ :: B$=SEG$(
A$,1,POS(A$," ",1)-1):: A$=S
EG$(A$,POS(A$," ",1)+1,255):
: PRINT A$;" ";B$ :: GOTO 11
0
```

And another challenge was to alternately assign X the value of A and B, without using IF...THEN or any outside help. That seems to require a two-liner -

```
100 A,X=77 :: B=132
110 X=ABS(X=A)*B+ABS(X=B)*A
:: PRINT X :: GOTO 110
```

The only honest way to compute interest on a loan is on the unpaid balance, although the banks and finance companies have devised more complicated and profitable ways. If you want to make an honest loan, here is how to do it -

```
100 DISPLAY AT(3,1)ERASE ALL
:"SIMPLE INTEREST CALCULATOR
":"":"For interest to be cal
culated monthly on unpaid
balance."
110 DISPLAY AT(9,1):"Printer
? PIO" :: ACCEPT AT(9,10)SIZ
E(-20):P$
120 DISPLAY AT(11,1):"Amount
loaned? $" :: ACCEPT AT(11,
17)VALIDATE(NUMERIC):A
130 DISPLAY AT(13,1):"Interes
t rate?      %" :: ACCEPT AT
(13,16)SIZE(4)VALIDATE(NUMER
IC):X
140 IF X<1 THEN DISPLAY AT(1
2,1):"Enter as a percentage"
 :: GOTO 130
150 DISPLAY AT(15,1):"Monthl
y payments of $" :: ACCEPT A
T(15,22)VALIDATE(NUMERIC):P
160 DISPLAY AT(17,1):"Beginn
ing in month (1-12)   of yea
r"
170 ACCEPT AT(17,27)VALIDATE
(DIGIT):M :: ACCEPT AT(18,9)
VALIDATE(DIGIT):Y
180 DATA JAN,FEB,MAR,APR,MAY
,JUN,JUL,AUG,SEP,OCT,NOV,DEC
190 X=X/100 :: DIM M$(12)::
FOR J=1 TO 12 :: READ M$(J):
: NEXT J
200 OPEN #1:P$,VARIABLE 254
:: PRINT #1:CHR$(27)&"E"&CHR
$(27)&"6"&CHR$(27)&"N"&CHR$(
6)&CHR$(27)&"M";
210 PRINT #1:"$";STR$(A);" F
INANCED AT ";STR$(X*100);"%
WITH MONTHLY PAYMENTS OF $";
STR$(P);" BEGINNING ";M$(M);
Y;""
220 I=A*X/12 :: TI=TI+I :: A
=A+I-P
230 PRINT #1:M$(M);Y;" PAYME
NT $";STR$(P);" OF ";
240 PRINT #1,USING "$###.##"
:I;:: PRINT #1:" INTEREST AN
D ";
250 PRINT #1,USING "$####.##
":P-I;:: PRINT #1:" PRINCIPA
L - BALANCE OF ";
260 PRINT #1,USING "$####.##
":A
270 M=M+1 :: IF M=13 THEN M=
1 :: Y=Y+1
280 IF A>=P THEN 220
290 PRINT #1,USING "FINAL PA
YMENT $###.##":A :: PRINT #1
,USING "TOTAL INTEREST PAYED
 $####.##":TI
```

Thanks to Bruce Harrison, here is a neat subprogram to sort strings into sequence as they are entered -

```
100 CALL CLEAR :: DIM W$(100
)
110 FOR J=1 TO N :: W$(J)=""
 :: NEXT J :: INPUT "N=? ":N
120 INPUT I$ :: IF I$="" THE
N 130 ELSE CALL INSORT(W$(),
I$,N):: GOTO 120
130 FOR J=1 TO N :: PRINT W$
(J):: NEXT J :: GOTO 110
30020 SUB INSORT(W$(),I$,N):
: FOR T=1 TO N :: IF I$>W$(T
)THEN 30030 ELSE 30040
30030 NEXT T :: GOTO 30050
30040 FOR J=N TO T STEP -1 :
: W$(J+1)=W$(J):: NEXT J
30050 W$(T)=I$ :: N=N+1 :: S
UBEND
```

In the test routine in lines 100-130, give N the value of 0, input some words and then just press enter.

To start a new array, use FOR J=1 TO N :: W$(J)="" :: NEXT J, then reset N to 0. If you want to sort in reverse sequence, change the > to <. If you need to sort numbers, delete all the $, change the "" in line 120 to 0, and input a 0 when you are when finished inputting.

Someone sent me a program to figure days between dates but it would not count leap dates, so I decided to write one that would.

```
100 DISPLAY AT(2,5)ERASE ALL
:"DAYS BETWEEN DATES":"":"
including leap year days" ::
 M$(1)="From" :: M$(2)="To
" :: R=13
110 DATA 31,28,31,30,31,30,3
1,31,30,31,30,31
120 DIM L(12):: FOR J=1 TO 1
2 :: READ L(J):: NEXT J
130 FOR J=1 TO 2 :: DISPLAY
AT(R-1,1):M$(J):"year    m
onth    day " :: ACCEPT AT(
R,6)VALIDATE(DIGIT)SIZE(4):Y
(J)
140 ACCEPT AT(R,17)VALIDATE(
DIGIT)SIZE(2):M(J):: IF M(J)
<1 OR M(J)>12 THEN 140
150 ACCEPT AT(R,24)VALIDATE(
```

NEXT PAGE

```
DIS(J):SIZE(2):D(J):: IF D(J)
<1 OR D(J)>31 THEN 150
160 CALL LEAP(Y(J),X):: L(2)
=L(2) X :: IF D(J)>L(M(J))TH
EN 150
170 L(2)=28 :: R=R+3 :: NEXT
 J :: R=13 :: IF Y(1)>Y(2)TH
EN T=Y(1):: Y(1)=Y(2):: Y(2)
=T :: T=M(1):: M(1)=M(2):: M
(2)=T :: T=D(1):: D(1)=D(2):
: D(2)=T
180 IF Y(1)=Y(2)AND M(1)>M(2
)THEN T=M(1):: M(1)=M(2):: M
(2)-T :: T=D(1):: D(1)=D(2):
: D(2)=T
190 L(2)=28 :: IF Y(2)>Y(1)T
HEN 220
200 IF M(1)=M(2)THEN B=ABS(D
(2)-D(1)):: GOTO 260
210 CALL LEAP(Y(1),X):: FOR
 J=M(1)+1 TO M(2)-1 :: B=B+L(
J)+X*(M(1)=2):: NEXT J :: B=
B+L(M(1))+X*(M(1)=2)-D(1)+D(
2):: GOTO 260
220 CALL LEAP(Y(1),X):: B=L(
M(1))-D(1)+X*(M(1)=2)
230 FOR J=M(1)+1 TO 12 :: B=
B+L(J)+X*(J=2):: NEXT J
240 FOR J=Y(1)+1 TO Y(2)-1 :
: CALL LEAP(J,X):: B=B+365-X
 :: NEXT J
250 FOR J=1 TO M(2)-1 :: CAL
L LEAP(Y(2),X):: B=B+L(J)+X*
(J=2):: NEXT J :: B=B+D(2)
260 DISPLAY AT(20,1):B;"days
 between" :: B=0 :: GOTO 130
270 SUB LEAP(Y,X):: X=(Y/400
=INT(Y/400)):: IF X=-1 THEN
SUBEXIT ELSE X=(Y/4=INT(Y/4)
):: IF X=0 THEN SUBEXIT ELSE
 X=(Y/100<>INT(Y/100))
280 SUBEND
```

A leap year is a year that is evenly divisible by 4 unless it is evenly divisible by 100 but not evenly divisible by 400. The subprogram in lines 270-280 will give X a value of -1 if Y is a leap year.

Gene Hitz of Arcade Action Software reports another undocumented feature of TI Extended Basic. The manual says that you can only enter a subprogram by a CALL and only leave it by a SUBEXIT or SUBEND, but the manual is wrong. You can GOSUB to a subroutine within a subprogram, providing it does not contain a SUBEXIT, and return; and you can GOSUB from within a subprogram to a subroutine in the main program, and return. In this way, you can transfer variables in and out of a subprogram without putting them in a parameter list. See for yourself -

```
100 CALL CLEAR
110 INPUT M$ :: CALL SUB(M$)
:: PRINT M$ :: GOSUB 140 ::
PRINT "M$ IS";X;"CHARACTERS
LONG" :: GOTO 110
120 M$="SEE WHAT I TOLD YOU?
" :: RETURN
130 SUB SUB(M$):: GOSUB 120
:: GOSUB 140 :: SUBEXIT
140 X=LEN(M$):: RETURN
150 SUBEND
```

If you are among the lonely few who have purchased my TI-PD disks, you will know that most of them load from a menu by full program name, not those abbreviated filenames. Those menus are prepared quickly and easily by my Catwriter program which was published in Tips #47 and in MICROpendium and is available on TI-PD 1105.2.

I was asked if there was a way to dump those full program names to the printer. There is, but it requires a big program - like this -

```
1 OPEN #1:"DSK2.TI-PD/CAT",A
PPEND
2 DISPLAY AT(12,1)ERASE ALL:
"TI-PD# ?" :: ACCEPT AT(12,1
0):N
14 FOR J=1 TO X-1 :: READ X$
 :: PRINT #1:X$;TAB(30);N ::
 NEXT J :: CLOSE #1 :: STOP
17 REM
```

Save that on an empty disk by SAVE DSK2.C,MERGE. Put your TI-PD disk in drive 1, boot its LOAD program, break it with FCTN 4 and enter MERGE DSK2.C, then RUN. Put in the next TI-PD disk and do the same. You will have a D/V80 file of all the programs, followed by their TI-PD disk number. Run the file through Sort Experiment or TI-Sort or whatever, and you can print them out in alphabetical sequence.

If you have only one drive just change that DSK2. to DSK1. and swap disks after breaking the LOAD program.

Of course, this won't work with fairware disks which have the author's own loader or some other disks which do not have my Catwriter load for one reason or another. You'll have to type those into the file.

Another user asked me if there was anyway to key in the ASCII above 127 into TI-Writer's Editor. Many of those ASCII can be entered from the keyboard by using the CTRL and FCTN keys - try this -

```
100 INPUT N$ :: PRINT ASC(N$
):: GOTO 100
```

- but the Editor has been programmed to refuse them because so many of those FCTN and CTRL combinations are used as edit commands.

I had a bright idea - I thought. I wrote a little program to create 127 files, named 128 through 255, each containing just the ASCII of the same number. Now, I thought, when I want to put in such an ASCII I will just LF that file into the next line and CTR 2 to pop it into place. But the Editor refused to even load a file that began with an ASCII above 127!

I'll fool you, I thought. I created those files again, but with an asterisk before the high ASCII. Now they loaded alright - but each ASCII above 127 became an ASCII 128 numbers lower! It is too bad that the Editor does not have a command to add 127 to an ASCII, just as CTRL U subtracts 64, but if you want those graphics characters in your text you will just have to translitterate them and print through the Formatter.

Folks take it for granted that my Nuts & Bolts disks are only useful for programmers, but they contain many routines so simple to use that anyone can use them to dress up their favorite program. For instance -

```
20083 SUB TITLE(S,T$):: CALL
 SCREEN(S):: L=LEN(T$):: CAL
L MAGNIFY(2)
20084 FOR J=1 TO L :: CALL S
PRITE(#J,ASC(SEG$(T$,J,1)),J
+1-(J+1=S)+(J+1=S+13)+(J>14)
*13,J*(170/L),10+J*(200/L)):
: NEXT J
20085 SUBEND
```

Key that in and save it by SAVE DSK1.TITLE,MERGE . Load your favorite program. Enter MERGE DSK1.TITLE. Make sure your program does not have a line 1 or 2 - if so, RES it. Type in -

```
1 CALL CLEAR :: CALL TITLE(5
,"MY PROGRAM")
2 FOR D=1 TO 1000 :: NEXT D
:: CALL DELSPRITE(ALL)
```

And try it. Instead of "MY PROGRAM", put the name of your program. Instead of 5, put the number of whatever screen color you would like, from 2 to 16 - check your Basic manual. Change 1000 to whatever delay you want - if you have selected a screen color that will leave text legible, use -

```
2 DISPLAY AT(24,1):"PRESS AN
Y KEY" :: DISPLAY AT(24,1):"
press any key" :: CALL KEY(0
,K,S):: IF S=0 THEN 2 ELSE C
ALL DELSPRITE(ALL)
```

You might also need a CALL SCREEN(8) to restore normal screen color.

Oops! Memory full! - Jim P

END

Extended BASIC 3

By Winfried Winkler

There are literally thousands of programs written in Extended BASIC - more programs than in any other language. Despite the popularity of the language, the most common version in use is still *TI Extended BASIC*™ - 11 years after its introduction. Other versions have been released over the years, but they were either incompatible with the standard, or were geared towards *programmers*, and didn't offer anything to *program users*.

Extended BASIC 3™, by Winfried Winkler, is a new kind of Extended BASIC for the TI-99/4A. Like other enhanced versions, it offers a range of new functions and commands for programmers. Unlike other Extended BASICs, it also offers improvements at the very core of the language. By spending 3 years to re-write every part of Extended BASIC, *Extended BASIC* 3™ is the only Extended BASIC that at all at once:

- Runs existing programs 25-50% faster than they run in *TI Extended BASIC*™.
- Eliminates bugs in the original that make Extended BASIC sometimes unreliable - and are found in every other Extended BASIC - including *TI Extended BASIC*™
- Is compatible with virtually all *TI Extended BASIC*™ software - everything from games to libraries of Assembly routines for programmers.

Extended BASIC 3™ is the only Extended BASIC for the TI-99/4A that offer a range of new capabilities for *programmers* and also allows *program users* to run virtually all of their Extended BASIC software faster and more reliably.

Not only is *Extended BASIC* 3™ a major enhancement over the original - it also uses an exciting new technology that allows us to put 256K of programs and cartridges in a single module. This amazing module includes:

- The *Extended BASIC* 3™ cartridge
- The full TE2 cartridge - allowing you to use text-to-speech capabilities within your *Extended BASIC* 3™ programs without loading utilities
- A complete *Editor/Assembler* cartridge - with the Editor and the Assembler programs
- The *TI-Writer* cartridge with an enhanced Editor and Formatter
- Finally, A range of utilities such as a disk manager, *Mass Transfer* and *Remind Mel*.

With an *Extended BASIC* 3 module plugged in you may never have to change cartridges again. Everything you need is built into a single cartridge - and available from a menu.

Extended BASIC 3 is the most exciting enhancement to the TI-99/4A in years - we are so confident you will agree that it even carries a money-back guarantee.

$99.95 U.S. Add $2.50 S&H
Canada Add $3.00 S&H
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Includes extensive documentation
Requires 32K or more memory. A disk system is recommended

TI Extended BASIC is a trademark of Texas Instruments Inc.
Extended BASIC 3 is a trademark of Asgard Software
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1423 Flagship Dr. • Woodbridge, VA 22192

- Virtually all math functions and floating-point math routines (COS, SIN, etc.) have been re-written and are typically 100% to 200% faster. Extensions have been made to the RND function to allow ranges and more randomization
- A range of new commands available at the command line, including:
  # - Displays a catalog of the device in quotes after the function
  ALPHAED - Defines all Control characters in inverse video
  ERASE - Allows you to delete a range of lines
  OUTPUT - Saves the range of line numbers specified to disk in Merge format
  PERMANENT - Allows you to turn off or on the true-lower-case character set as well as deactivate lower case letters
  SAVE - The "Protected" option now truly protects a program from being listed
  SIZE - Displays the amount of Low Memory space available as well as other space
  USING - Lists all CALL statements in a program
  VARIABLE - Lists all the variables in a program

While many of the features and all of the speed enhancements in *Extended BASIC III* are unique to this cartridge, it is compatible to some degree with *Mechatronics Extended BASIC*.

Extended BASIC III is currently available in disk form for those users with a Mechatronics GRAM-KARTE for $39.95.

A 96K cartridge version that requires only a console and 32K memory expansion is expected to be available by June 15, 1993 for $74.95.

Finally, available by April 15, 1993, the *XB3 SUPER MODULE*. This 192K module has built into it:

- *Extended BASIC III*
- The TE2 cartridge - allowing you to perform true text-to-speech in *XB3* WITHOUT any additional software(!)
- The Editor/Assembler cartridge
- TI-Writer, it's Editor and Formatter
- The Remind-Me! appointment program
- Mass-Transfer
- A full disk manager
- various other miscellaneous utilities

For a list price of $99.95. This cartridge is an entire productivity package all-in-one module - plug it in and you may never have to unplug it again. This version requires 32K and a disk system.

Send all inquiries to:

Asgard Software, 1423 Flagship Dr., Woodbridge, VA 22192

News Release:

EXTENDED BASIC III

While there have been many revisions to TI Extended BASIC over the years, none is as extensive or fundamental as *Extended BASIC III* by Winfried Winkler.

Rewritten and revised in the native language of Extended BASIC, GPL, *XB3* features substantial improvements in the language itself, not just added calls and functions. Unlike other Extended BASIC's, this one offers tangible benefits to people who are casual XB users, as well as the hardcore programmers. Why? Because this version of Extended BASIC is the only one that will run your entire library of Extended BASIC programs, without modification, up to 50% faster then the original version of TI Extended BASIC. Unlike *Myarc Extended BASIC*™ - this version of Extended BASIC is 100% compatible with all TI Extended BASIC programs and add on utilities.

Additionally, bugs that cause other Extended BASICs to occasionally crash (and the infamous graphics screen show that, while interesting, certainly didn't help your programs) have been eliminated. *XB3* is rock-solid and dependable - great for anyone running programs for hours or days at a time (BBS', etc.).

If you are interested in writing new programs, *XB3* offers a wide range of added functions, calls, modifications and conveniences - many of the best offered in other variations along with a number of unique changes. These include:

- Allows character definitions up to code 159 - in fact, *XB3* is fully compatible with TI-BASIC
- The GOTO and GOSUB statements will allow you to jump to a variable (as in GOTO X)
- Enhancements to the IMAGE command to allow more flexible formatting
- Extensions to the CALL MOTION command that allows you to stop and start all sprites at once
- The RESTORE command will reverse a RESequence
- COPY and MOVE commands for copying and moving ranges of lines
- The assembly LOADer recognizes a wider range of utilities including GPL utilities for manipulating a stack, RADIX-100 math, and so forth for use in your assembly subroutines. The loader also will load Compressed format assembly files with REFerences - and adds a wide range of new REFerences available for called subroutines
- A range of new calls including:
  ALL(N) - Fills the entire screen with the specified ASCII code
  ALOCK(N)- Tests whether the Alpha Lock is set - returns a value
  BYE - Now legal within a running program
  CHAR ALL - For controlling the character set
  CHIMES - Sounds a chime
  CLRS - Clears only the text area (columns 3-30)
  COLOR - Now accepts the colorset description "All"
  FIND - Will find the specified string within an array of strings
  GPEEK - GPL Peek command
  GPOKE - GPL Poke command
  HONK - Produces a "honk" sound
  KEYCH($ P) - Waits for the keys specified in the string $ and returns the value P with the key's position in the string
  MLOAD - Loads a memory-image file into the specified memory location
  MOVE - Move ranges of memory between RAM, VRAM, ROM and CROM
  MSAVE - Save a portion of memory to disk in memory-image file format
  NEW - Now legal within a program
  PRNTPAT - Print a character definition to an Epson compatible printer
  QUIT OFF/ON - Turn on/off the QUIT key
  SCREEN ON/OFF - Turn off and on the screen
  VPEEK - VDP RAM peek
  VPOKE - VDP RAM poke
  WAIT - Pause program for a specified period
- A new range of functions have also been added:
  ASC - Will handle an empty string without crashing a running program
  CLOSE - Will close all open files at once
  DEF - All user defined functions may be used outside of a running program at the command line
  DATE$ - Returns the current date with a clock card
  HEX$ - Returns the Hexadecimal equivalent of a decimal number
  LWRC$ - Converts a string to lower case
  TIME$ - Returns the current time with a clock card
  UPRC$ - Converts a string to upper case
  VAL - Will now convert a hex string into a numeric value

Extended BASIC Programmers!

Don't think that we've forgotten about you! *Extended BASIC* 3™ contains a range of new functions that make it easier to write programs, some exciting extensions to the language, and many new functions and commands that can make your programs more capable than ever before.

At the *XB3* command line you can type simple commands to get a listing of all the variables and CALLs in your programs. You can also delete or save in "merge" format any range of lines. Even un-RESEQUENCE a program!

Your *XB3* programs can also jump to a calculated GOTO or GOSUB (as in "GOTO X"), you can save, load and manipulate any kind of file (including program-image, CROM and VRAM data), and access true text-to-speech without loading buggy assembly routines that take up precious RAM.

The list of new commands includes all the popular ones found in *Mechatronics Extended BASIC*, plus innovative new commands for string searching, key reading, and the list goes on and on.

Finally, the list of new functions includes support for Hex numbers, access to clock cards, and so forth.

In addition to everything new, there are a range of enhancements in current features and the elimination of lots of bugs.

On top of all this, remember that *Extended BASIC* 3™ is a real speed improvement over other Extended BASICs. Most graphics commands are 25-100% faster, math functions are from 20-200% faster, string commands much 25-30% faster, and even File I/O is 10-15% faster! Include full compatibility with *TI Extended BASIC*™ - and *TI BASIC*™ - and it all adds up to the best thing for Extended BASIC programmers in a long time.

Order Form

Item Name	Price	No.	Total
Extended BASIC 3	$99.95		
		Subtotal:	
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		TOTAL:	

Name:_____
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City:_____ **State:**_____
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Woodbridge, VA 22192

ANNOUNCEMENT

Subject: *First Draft 2.0 Now Shipping!*

Contact: Asgard Software
1423 Flagship Dr.
Woodbridge, VA 22192
(716)778-9104 (10AM-6PM EST, Mon-Fri)
(703)491-1267 (7PM-10PM EST, Mon-Sat)

Art Gilhann and Asgard Software are pleased to announce the release of *First Draft* version 2.0.

This comprehensive update offers many enhancements to the operation and capabilities of an already remarkable word processor. The only popular word processor currently available that is *not* a re-write of TI-Writer, the update expands and improves on its many unique features.

Version 2.0 offers the following:

- IMPROVED INSTALLATION. *First Draft* was the first (and so far only) word processor that can be fully customized. When you install *First Draft* it asks you a range of questions. Your answers are then embedded within the program - including screen colors, tabs, default disk drives and much more. Version 2.0 now allows you to install the program even if you only have a single disk drive.

- IMPROVED DISK ACCESS SPEED. *First Draft 1.0* was the first (and only) word processor for the 4A that didn't limit your text file to what you can cram into RAM - the only limit was your available disk space. In *First Draft 2.0* this is still true, but disk access is many times faster and more intelligent. If you have a RAM-disk, you most likely won't even lose a keystroke when it goes to disk with version 2.0.

- NEW KEYBOARD BUFFERING. Do you type too fast for TI-Writer or its clones? If you are frustrated by dropped letters at the end of your sentences, you may be interested to know that *First Draft 2.0* offers advanced buffering of the keyboard. In fact, it is virtually impossible to out-type *First Draft 2.0*!

- IMPROVED 40-COLUMN SUPPORT. In *First Draft 1.0* users without 80-column cards could only create documents 40 characters wide. To print in 80-columns you have to use the program's *Final Copy* formatter. This limitation is gone - in spades - in version 2.0! Not only do you get an 80-column wide page with a standard 99/4A, but the screen window scrolls over as you type (like WordPerfect), and again, you never lose a keystroke! As always, you can use the 80-column display offered by the Geneve and all TI 80-column cards.

- FASTER SPELL-CHECKING. *First Draft 1.0* was one of the few TI word processors with a spelling checker built-in, and the only one currently available. This spelling checker allows you to check a word or the whole document while you are writing it. *First Draft 2.0* is now officially the FASTEST SPELLING CHECKER for the 99/4A or the Geneve. This new and improved checker even beats out the previous speed champ - our own Spell It! *First Draft 2.0*'s spelling checker will find any word in the included 25,000 word dictionary in a seconds - even from floppy disk.

- EXTENDED MEMORY SUPPORT. Even though *First Draft* doesn't have a limit on the size of documents you can create, more memory will make any program faster. *First Draft 2.0* is the first 99/4A word processor designed to take advantage of the new generation of Extended Memory cards for the 99/4A - AMS and AEMS compatible memory cards. If *First Draft 2.0* sees an AMS compatible card, it will automatically put all of itself into it, and use the remaining space to store text before it is sent to disk. A 128K AMS will store 70K+ of text in memory, and let you move between the *First Draft* editor and the *Final Copy* formatter at the press of a button - and your document stays in memory in the process. With a 512K AMS or AEMS, you can have over 450K of text in memory; more than WordPerfect 5.1 lets you have on a 640K PC!

- MAKE KEYBOARD MACROS. *First Draft 2.0* is the only word processor for the 4A or the 9640 that let's you define up to of 11 keyboard macros for commonly used text - and load or save those macros to disk.

- FULL GENEVE COMPATIBILITY. In contrast to version 1.0, *First Draft* has been modified and verified to work fully on a Geneve with 1.14F of MDOS and 1.04 of the GPL Interpreter. Because we thought this was the case in version 1.0, we are giving *all* registered owners of *First Draft 1.0* a free upgrade to 2.0. We value our decade-long relationship with our customers more than anything else.

- COMPLETELY NEW MANUALS. While our original manual was pretty good, we took all the comments we received from our customers and completely re-wrote the manual for version 2.0 from scratch. The result is a much more professional, easy to follow guide to using *First Draft*.

In addition to the many major changes in version 2.0, there are also many lesser ones, including faster search and replace, faster line deletion, paragraph reformatting that can be controlled, enhancements to the *Final Copy* formatter, access to all control codes and character graphics in your document, and more.

As with version 1.0, *First Draft 2.0* still offers many unique features unmatched by other word processors, including the ability to:

- Write in parallel columns on the screen in *First Draft*, and format in newsletter-style columns in *Final Copy*
- Include TI-Artist instances and Page Pro 99 pictures in your documents for logos, headlines and much more
- Use built-in print drivers or create your own. Print drivers allow you to take advantage of your printer without putting printer codes in your document - so your documents will print the same on any printer from an old TI Impact Printer to a new HP Laserjet 4
- Manage disks with a built-in disk manager with support for DISKU comments
- Use the program from a "pull-down menu" user interface - no command line
- View your formatted document before printing with the Screen Preview function built into the *Final Copy* formatter
- Take advantage of dozens of new formatting commands that let you to control everything about your printer and document with simple to use commands, and still use all of the old TI-Writer formatting commands too.
- And of course, much more

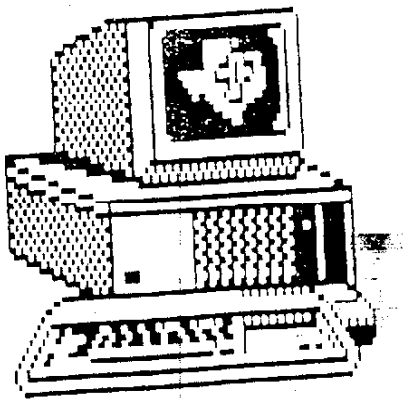
First Draft 1.0 was the first all-new word processor for the 99/4A in years, and offered many promising new features found nowhere else. *First Draft 2.0* fulfills the promise of version 1.0 with a mature program that lets you do things you would otherwise have to buy another computer to do.

ORDERING INFORMATION

First Draft 2.0 has a suggested retail price of $39.95. This includes 2 disks and 2 manuals. Until August 1, 1993, registered users of Spell It! can purchase the program for $29.95 (to order, include a photocopy of your program disk). Updates from version 1.0 will be mailed free of charge to registered users.

To order, send a check or money order, plus $3.00 S&H (overseas Airmail, $7.00) to:

Asgard Software
1423 Flagship Dr.
Woodbridge, VA 22192



NEW FOR 1998 FROM COMPRODINE

COMPRODINE announces the release of 4 new products for the TI-99 and 9640 users. Software requires TI or 9640, XB or EA, 32K memory and disk drive.

ARTIST CARDSHOP- by Paul Coleman is our newest 4-fold card-making utility. Fast, flexible, easy and friendly, this program will step you through your card creation in just minutes. When done it will print the card(s 0-99), ready to fold, sign and send.

This program utilizes TI-ARTIST compatible Fonts and Instances which means there are hundreds of Fonts and thousands of Instances(pictures) to draw from in the TI world. The card may have 2 Fonts on the front and 2 different Fonts on the inside page. You may also use up to 4 Instances on each of the front and inside page. One Instance can be placed on the back page for perhaps a logo.

*FEATURES- Easy step-through menu system
Uses TI-ARTIST fonts and instances
Proportional spacing of letters
Pictures and text on same lines
Pictures may be mirrored
May have a row of pictures across page
Double density double pass printing for good results
25 borders included, plus a blank border
A border maker to make your own borders
Extra- special font and instance utilities
A 20 page info-packed manual with pictures of borders

PRICE- $20 + $1.50 postage

WAR ZONE II- by Quinton Tormanen is similiar to WAR ZONE but set in the future and each of its 20 levels has different graphics with real trees, fields, rivers, lakes and roads with moving vehicles. High scores save to disk and scoring guide displayed on screen. Greater logic is required of this arcade style game. PRICE $10 + $1 postage requires joystick

MINE FIELD- by Quinton Tormanen is a mind teasing logic game. The object is to clear a mine field by exposing only the safe areas. 10 sizes to choose from. You will get either a time if you win or a percentage completed. This will be saved to disk. This is based on an IBM Windows game but has more options and plays faster than a 386-33 machine. Because there is some element of luck, you may choose up to 3 mistakes per game. Winning scores will be saved to disk. PRICE $10 + $1 postage

BACKSTEINE SCREENS- by Steve Mehr are 50 new well designed screens for Backsteine users. Each screen has been tested for playability and uniqueness. A new version 1.2 of Backsteine is included with these new screens. An install program updates your version and places the new screens onto your old copy. PRICE $7 + $1 postage

We have many new programs coming out in 1998 including games and color printing programs for color printer owners.
To order, mail check or money order to:

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The Newsletter of the
LONG ISLAND 99er's U. G.

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